Control Number: 51415

Item Number: 408

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SOAH DOCKET NO. 473-21-0538

PUC DOCKET NO. 51415

PUBLIC UTILITY COMMISSION OF TEXAS

APPLICATION OF

SOUTHWESTERN ELECTRIC POWER COMPANY

FOR AUTHORITY TO CHANGE RATES

REBUTTAL TESTIMONY OF

C. RICHARD ROSS

FOR

SOUTHWESTERN ELECTRIC POWER COMPANY

APRIL 23, 2021

TESTIMONY INDEX

EXHIBITS

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, POSITION, AND BUSINESS ADDRESS.

A. My name is C. Richard Ross. I am currently the Director RTO Policy SPP/ERCOT for American Electric Power Service Corporation (AEPSC). My business address is 212 East Sixth Street, Tulsa, Oklahoma, 74119.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND.

A. I received a Bachelor of Science degree in Electrical Engineering from Texas A & M University in 1989.

From 1989 to 1991, I was a Software Engineer for General Dynamics, Fort Worth Division, to develop flight simulation software for the F-16 simulators.

From 1991 through 1994, I was a System Operations Engineer for Southwestern Electric Power Company (SWEPCO or Company) providing engineering support for all System Operations activities including regulatory, litigation and merger support, production cost forecasting, and fuel budgeting. From 1994 through 1997, I assumed a similar role for all the Central and South West Corporation (CSW) Operating Companies (Central Power and Light Company, SWEPCO, West Texas Utilities Company, and Public Service Company of Oklahoma (PSO) as an Operations Engineer in the CSW Services System Operations department. During that period, I also supervised the energy accounting activities including the invoicing and accounting for all off-system purchases and sales for the CSW Operating Companies as well as the operation of the Interchange Cost Reconstruction (ICR) program and accounting of all transactions under the CSW Operating Agreement.

From 1997 through 1998, I served as an Engineer in the wholesale Power Marketing department managing the CSW Operating Companies' existing wholesale agreements as well as negotiating new agreements for the purchase or sale of power, energy and ancillary services.

From 1998 through 1999, I was responsible for negotiating the supply arrangements necessary to meet the power, energy, transmission service, and ancillary service requirements necessary to serve retail customers in the deregulated retail markets in the PJM and New England Power Pool interconnections.

From 1999 through 2000, as Manager of Production Costing, I supervised the engineering staff performing all production cost forecasting for the CSW Operating Companies including those studies used to support company fuel factor proceedings before the Public Utility Commission of Texas (Commission).

Since 2000, I have served in a variety of roles managing Regional Transmission Organization (RTO) policy staff representing the subsidiaries of American Electric Power Company, Inc. (AEP) in stakeholder and policy matters in the Electric Reliability Council of Texas (ERCOT), Southwest Power Pool (SPP), Midcontinent Independent System Operator (MISO), PJM Interconnection and matters before the Federal Energy Regulatory Commission (FERC).

Q. WHAT ARE YOUR CURRENT RESPONSIBILITIES?

A. Presently, as Director RTO Policy SPP/ERCOT for AEPSC, I represent the AEP Operating Companies in a variety of ERCOT and SPP stakeholder committees and proceedings on matters impacting the ERCOT and SPP wholesale market before federal and state regulatory commissions. Through my participation in these groups, I

also provide insight into operation of ERCOT and SPP to the affected areas of the AEP System to support the formation and implementation of policies and plans within the regions. I am also responsible for submitting requests, monitoring the transmission studies, and negotiating the agreements for long-term transmission service requests to serve AEP's operating companies' SPP Network Load.

Q. HAVE YOU PREVIOUSLY FILED TESTIMONY IN A REGULATORY PROCEEDING?

A. Yes, I have testified before the Commission, the Arkansas Public Service Commission, the Louisiana Public Service Commission, and the Oklahoma Corporation Commission.

Q. DID YOU FILE DIRECT TESTIMONY IN THIS CASE?

A. No.

II. PURPOSE OF REBUTTAL TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. In my rebuttal testimony, I address requirements for reporting Network Load in SPP. In doing so, I address certain assertions made by Texas Industrial Energy Consumers (TIEC) witness Jeffry Pollock and Eastman Chemical Company (Eastman) witness Ali Al-Jabir. Specifically, I respond to these witnesses' recommendations that the Commission disallow $5.7 million of transmission expense associated with SPP's provision of Network Integration Transmission Service (NITS) to SWEPCO.[1]

[1] *See, e.g.,* Direct Testimony of Jeffry Pollock at 25:14-18; *see also, e g* , Direct Testimony of Ali Al-Jabir at 28:8-21.

III. SPP'S PROVISION OF NETWORK TRANSMISSION SERVICE

Q. PLEASE GIVE A BRIEF SUMMARY OF SPP'S ORGANIZATION AND OPERATIONS.

A. SPP is a FERC-approved RTO. It is an Arkansas non-profit corporation with its principal place of business in Little Rock, Arkansas. SPP currently has more than 95 members and serves more than 6 million households in a 546,000 square-mile area. SPP, in its role as an RTO, currently administers transmission service over 66,000 miles of transmission lines covering portions of Arkansas, Iowa, Kansas, Louisiana, Minnesota, Missouri, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, and Wyoming.

Q. DOES SWEPCO OPERATE WITHIN SPP?

A. Yes, as explained in SWEPCO witness Daniel Boezio's direct testimony, SWEPCO has transferred functional control of its transmission facilities to the SPP RTO. As part of SPP's Transmission System, SWEPCO's transmission facilities deliver power and energy from generators throughout the SPP RTO footprint to SWEPCO's transmission and distribution system loads as well as the transmission and distribution system loads of other utilities, cooperatives, and municipalities within the SWEPCO service area. For its own use of the SPP Transmission System, SWEPCO purchases NITS under the SPP Open Access Transmission Tariff (OATT) to transmit energy from resources on the SPP Transmission System to SWEPCO's loads on the SPP Transmission System.

Q. HOW DOES SPP DETERMINE CHARGES TO SWEPCO FOR NITS PROCURED UNDER THE SPP OATT?

A. Generally, SPP is only able to charge rates for its services as outlined within its FERC-approved OATT. Any changes or exceptions from the terms outlined in the OATT require specific approval, such as a waiver or tariff revision, from FERC. As an SPP customer, SWEPCO is obligated to pay the charges billed by SPP for the services taken under the OATT. The Commission has also concluded that proof that SPP charges billed to and paid by SWEPCO pursuant to the SPP OATT demonstrates the reasonableness of the charges for retail ratemaking purposes as a matter of law.[2]

As to charges for NITS specifically, under the SPP OATT, there are numerous service Schedules that outline the process SPP follows to assess charges for the various services provided by SPP. These charges are outlined in SPP OATT Schedule 9 and Schedule 11. Schedule 9 is associated with the transmission facilities originally placed in service prior to the formation of the SPP RTO and Schedule 11 covers those facilities directed for construction by the SPP RTO. The billing for the transmission services provided under Schedules 9 and 11 requires that SPP receive network load data for all network load in the region to allocate the cost of the services to customers in the region. In its simplest form, the cost for the use of the SPP Transmission System is allocated by SPP to NITS customers based on the ratio of each customer's monthly load to the total system load at the time of the monthly system peak.

[2] *Application of Southwestern Electric Power Company for Approval of a Transmission Cost Recovery Factor*, Docket No. 42448, Final Order at Conclusion of Law 18 (Nov. 24, 2014).

Q. WHAT RECOURSE DOES AN SPP MEMBER HAVE IF IT BELIEVES THAT SPP IS MISAPPLYING THE OATT?

A. I am not an attorney, but my understanding is that FERC has the exclusive jurisdiction to interpret and enforce the SPP OATT. After first exhausting the dispute resolution procedures under the OATT, an SPP member or customer, such as SWEPCO or Eastman that believes that the OATT is not being applied properly can submit a complaint to the FERC.

IV. BEHIND THE METER GENERATION

Q. PLEASE SUMMARIZE WHY MESSRS. POLLOCK AND AL-JABIR RECOMMEND DISALLOWING A PORTION OF SWEPCO'S TEST YEAR TRANSMISSION CHARGES FROM SPP.

A. Messrs. Pollock and Al-Jabir insist that $5.7 million of SWEPCO's Test Year transmission charges from SPP are the direct result of SWEPCO's allegedly improper inclusion of load from retail behind the meter generation (BTMG) in SWEPCO's monthly coincident peak load data used by SPP to determine SWEPCO's load ratio share contribution to transmission costs.

As noted above, SPP relies on a load ratio share calculation to determine each NITS customer's share of SPP's network transmission costs. This load ratio share allocation is based on the monthly network load of a Network Customer, such as SWEPCO, at the time of the monthly peak of the transmission zone where the Network Customer's load is physically located.

Messrs. Pollock and Al-Jabir argue that SWEPCO's practice of including retail BTMG load in its monthly network load increases SWEPCO's load ratio share is not required by the SPP OATT and, in turn, improperly increases SPP's allocation of transmission charges to SWEPCO. For the reasons discussed below and in the rebuttal testimony of SWEPCO witness Charles Locke, Director, Transmission Policy and Rates at SPP, the Commission should reject their claims.

Q. WHAT IS MEANT BY THE PHRASE BTMG?

A. In the context of the SPP Transmission System and OATT, BTMG refers to a generation unit that is behind the transmission system meter—i.e., it is not directly connected to the bulk transmission system—and is intended to serve all or part of the capacity and/or energy needs for the load behind that same meter without withdrawing energy from the SPP Transmission System. However, the load served by this generation operates synchronized to the SPP Transmission System such that, when the BTMG resource trips off line, the load served by that BTMG remains on the system and immediately begins to withdraw power from the SPP Transmission System.

Q. WHY DOES SWEPCO INCLUDE LOAD FROM RETAIL BTMG IN ITS MONTHLY LOAD DATA REPORTED TO SPP?

A. SWEPCO includes retail BTMG in reporting its monthly peak load data to SPP because SPP instructed all of its members, including SWEPCO, to include all the BTMG in the transmission billing determinants unless there is an exception by FERC. SPP has

confirmed this directive in multiple presentations to SPP members, as shown in Exhibit CRR-1R.[3]

In addition, SWEPCO and SPP must design, construct, and operate its transmission system to serve its entire load, including load that is sometimes served by BTMG. If the BTMG experiences a forced outage and the load remains connected, it will immediately begin withdrawing power from sources across the SPP transmission system. While the facility might reduce consumption if SWEPCO indicates "as available" power is unavailable, the Transmission System must be operated in a manner to survive such a contingency. Consequently, BTMG is appropriately included in SWEPCO's monthly peak load data.

Q. MESSRS. POLLOCK AND AL-JABIR CONTEND THAT THE SPP OATT DOES NOT REQUIRE THAT SWEPCO INCLUDE LOAD FROM RETAIL BTMG IN ITS MONTHLY LOAD DATA REPORTED TO SPP.[4] DO YOU AGREE?

A. No, I do not. Despite Messrs. Pollock and Al-Jabir's claims, SWEPCO's inclusion of retail BTMG load in its monthly load data reported to SPP is not the result of the Company's interpretation of the SPP OATT nor is it a voluntary choice. Further, SWEPCO is not "proposing" in this case, as Mr. Al-Jabir repeatedly suggests, that it be allowed to include retail BTMG in its monthly load data reported to SPP.[5] Rather, as noted above, SWEPCO has been directed by SPP to include retail BTMG in its

[3] Exhibit CRR-1R was provided in SWEPCO's response to TIEC 6-3 request for information.

[4] Direct Testimony of Jeffry Pollock at 15:15 – 17:3; Direct Testimony of Ali Al-Jabir at 11:12-19, 14:19-20.

[5] *See, e.g.*, Direct Testimony of Ali Al-Jabir at 3:7-9, 3:17-28, and 4:15-23.

monthly load data. SWEPCO witness Charles Locke addresses the SPP OATT requirements in more detail in his rebuttal testimony.

Essentially, Messrs. Pollock and Al-Jabir are asking the Texas Commission to interpret the FERC – jurisdictional SPP OATT and conclude that SPP's directive is contrary to the OATT's terms. As I noted above, my understanding is that any dispute over the interpretation and implementation of the OATT's terms should be brought before the FERC.

Q. HAS TIEC EXPRESSED DISAGREEMENT DIRECTLY TO SPP WITH REGARD TO SPP'S APPLICATION OF THE OATT AS IT RELATES TO RETAIL LOAD SERVED BY BEHIND THE METER GENERATION?

A. Yes. In response to a discovery request in this proceeding, TIEC provided communications between it and SPP regarding SPP's application of the OATT as it relates to retail load served by BTMG. In email communications sent in March and June of 2019, from counsel for TIEC to SPP General Counsel, Paul Suskie and SPP Director of Transmission Policy and Rates, Charles Locke, TIEC expressed its opinion that the SPP OATT does not require the recognition of retail load that is served by BTMG in the calculation of monthly network load. It appears that SPP was unpersuaded by TIEC's arguments given that SPP in January of 2021 released a presentation coming to the opposite conclusion. I have attached that presentation to this testimony in Exhibit CRR-1R. These communications between TIEC and SPP, as well as SPP's January 2021 presentation, demonstrate that TIEC's disagreement over the application of the SPP OATT is with SPP, not SWEPCO.

Q. MR. POLLOCK CLAIMS THAT IT IS SWEPCO'S POSITION THAT IT WILL REPORT LOAD SERVED BY A CUSTOMER'S OWN BTMG EVEN IF SWEPCO NEVER SERVES THAT LOAD.[6] IS THIS TRUE?

A. Contrary to Mr. Pollock's claim, SWEPCO does not have a position on this issue. SWEPCO is following the SPP directive to include load served by BTMG in the monthly billing demands used for network loads. The only possible exceptions that have been acknowledged by SPP are the instances where the generator and the load operate in a manner such that neither the load or the generator are synchronized with the SPP Transmission System or where there is an assurance that the loss of the generation results in a simultaneous loss of load.

Q. DO EITHER OF THOSE EXCEPTIONS APPLY TO EASTMAN?

A. No. As far as the load served by Eastman's BTMG, neither of these conditions apply.

Q. DOES SWEPCO SOMETIMES SERVE THE LOADS AT THE EASTMAN SITE?

A. Yes. Mr. Al-Jabir acknowledges this in his testimony including the fact that this occurs any time, albeit infrequently, that there is a forced outage of the Eastman BTMG.[7] As a result of this condition, whether it occurs at the time of the peak or not, NERC criteria require the SPP Transmission System be capable of handling this sudden withdrawal of energy from the system at all times. Furthermore, it is not physically possible for the Eastman BTMG to serve all of the load at the Eastman site without using the SPP Transmission System. This is not possible because the loads served by the Eastman generation are served from two different points of interconnection on the SPP

[6] Direct Testimony of Jeffry Pollock at 15:1-4.

[7] Direct Testimony of Ali Al-Jabir at 5:17-24.

Transmission System, and the Eastman BTMG is only connected behind one of those locations. As a result, in order to be served by Eastman's generation, a portion of that BTMG energy generated must enter the SPP Transmission System at one location, be transmitted across facilities that are part of the SPP Transmission System, and then be delivered to the Eastman load at the second transmission point of interconnection.

Q. MESSRS. POLLOCK AND AL-JABIR NOTE THAT HISTORICALLY SWEPCO DID NOT INCLUDE RETAIL BTMG LOAD IN ITS MONTHLY LOAD DATA REPORT TO SPP, BUT CHANGED ITS PRACTICE IN LATE 2018.[8] IS THIS CORRECT?

A. Yes, the change occurred at that time because, as described in the testimony of Charles Locke, SPP made it clear that such loads must be included in the monthly load data reported to SPP for transmission billing purposes. This period coincided with a maintenance outage of the Eastman BTMG at which point SPP recognized, what it believed to be, abnormal real time flows on the system. After further investigation, SPP initiated efforts to model the load served by Eastman using Eastman's BTMG in its real time operating systems. SWEPCO also then recognized that, given the facts of the configuration and operations and, that it is impossible for the entire Eastman load to be served without the use of the SPP Transmission System, this load served with Eastman's BTMG must be included in loads used for transmission billing by SPP.

[8] Direct Testimony of Jeffry Pollock at 15:19 – 16:1; Direct Testimony of Ali Al-Jabir at 8:8-12.

Q. MESSRS. POLLOCK AND AL-JABIR ASSERT THAT SWEPCO HAS INCONSISTENTLY REPORTED THE LOAD OF RESIDENTIAL AND COMMERCIAL CUSTOMERS.[9] PLEASE RESPOND.

A. It is true that, prior to the changes that took place in October 2018, SWEPCO was not reporting the load served by the Eastman BTMG that is behind the two Eastman delivery points. However, since that time, SWEPCO has been updating its data reporting to include retail BTMG loads in response to SPP's directive. In some instances, SWEPCO has not included these loads because the generation and associated load are not synchronized to the SPP system or there is a concomitant loss of load with the loss of generation at the site. SWEPCO has also not included in its network load report to SPP the loads served by smaller-scale "roof-top solar" behind retail distribution system points of delivery. SWEPCO will continue to review these situations and, as appropriate, update our data reporting procedures for SPP transmission billing.

I should note that I initiated the effort to make data reporting changes beginning with the loads served using the Eastman BTMG due to the size of the facility, its impact on day-to-day SPP real-time operations and the fact that it is impossible for the Eastman BTMG to serve all of the load at the Eastman Facility without the use of the SPP Transmission System. Furthermore, the relative size of the Eastman facility makes it larger than all other potential BTMG combined in SWEPCO's Texas jurisdiction and, in fact, across its entire service territory.

[9] Direct Testimony of Jeffry Pollock at 15:5-6; Direct Testimony of Ali Al-Jabir at 15:11 – 16:9.

In the case of the other potential BTMG sites, other than roof-top solar, my initial review with our customer services staff led me to understand that, unlike the Eastman load, the loads at these sites were either not actually synchronized with the SPP transmission system or the loss of the generation would result in the concomitant loss of load.

Q. MESSRS. POLLOCK AND AL-JABIR TESTIFY THAT SWEPCO'S PRACTICE OF INCLUDING RETAIL BTMG LOAD IN REPORTS TO SPP IS NOT A STANDARD PRACTICE AMONG SPP NETWORK CUSTOMERS.[10] DO YOU AGREE?

A. I cannot agree or disagree because I am not aware of how other SPP Network Customers report their monthly load data to SPP. Moreover, whether other customers ignore the SPP OATT's requirements regarding the reporting of network load does not appear to me to be a reasonable basis for SWEPCO to do so.

Q. MESSRS. POLLOCK AND AL-JABIR CLAIM SWEPCO HAS FAILED TO DISTINGUISH BETWEEN RETAIL AND WHOLESALE BTMG.[11] DO YOU AGREE?

A. No, as explained in the testimony of Mr. Locke, the difference is not relevant. While SPP stakeholders discussed and even proposed revision to the SPP Tariff, SPP Revision Request (RR) 241, to implement a BTMG waiver or exception, the proposal was not

[10] Direct Testimony of Jeffry Pollock at 18:1-9; Direct Testimony of Ali Al-Jabir at 13:15 – 14:7.

[11] Direct Testimony of Jeffry Pollock at 17:4-16; Direct Testimony of Ali Al-Jabir at 6:13 – 7:2.

approved by votes of the SPP Stakeholders nor did the SPP Board approve its filing with the FERC.[12]

Q. IF RR 241 HAD BEEN APROVED, FILED AT FERC, AND THEN APPROVED BY FERC FOR INCORPRATOIN INTO THE SPP OATT, WOULD IT HAVE PROVIDED AN EXCEPTION FOR THE LOAD SERVED BY THE EASTMAN BTMG?

A. No. The proposed revision required that generators with a combined rating greater than 1MW be included in BTMG reporting.

Q. MESSRS. POLLOCK AND AL-JABIR ASSERT THAT OTHER REGIONAL TRANSMISSION ORGANIZATIONS EITHER PERMIT UTILITIES TO EXCLUDE THE LOAD SERVED BY RETAIL BTMG FROM THEIR MONTHLY NETWORK LOAD CALCULATIONS AS A MATTER OF PRACTICE OR THEY HAVE EXPLICIT TARIFF PROVISIONS THAT EXCLUDE RETAIL BTMG LOAD FROM THESE CALCULATIONS.[13] PLEASE RESPOND.

A. While it is tempting to look at the tariffs of other RTOs, in my opinion, what they include in their tariffs is not relevant to or controlling in this case. SWEPCO is a Network Customer of SPP and, as such, is bound by the SPP OATT's terms and conditions. Further, I believe SWEPCO's decision to comply with SPP's directive regarding the reporting of network load is reasonable.

Q. MESSRS. POLLOCK AND AL-JABIR MAINTAIN THAT THE PRACTICE OF INCLUDING LOAD SERVED BY RETAIL BTMG IS INCONSISTENT WITH

[12] SPP Revision Request RR 241was not approved by the MOPC in late 2017.

[13] Direct Testimony of Jeffry Pollock at 20:6-19; Direct Testimony of Ali Al-Jabir at 19:2-9.

REGULATIONS CONCERNING QUALIFYING FACILITIES.[14] PLEASE RESPOND.

A. No, the regulations that Messrs. Pollock and Al-Jabir rely on provide that "rates for sales of back-up power or maintenance power shall not be based upon an assumption ... that forced outages or other reductions in electric output by all qualifying facilities on an electric utility's system will occur simultaneously, or during the system peak, or both."[15] But, SWEPCO does not make that assumption in the calculation of its monthly peak load data reported to SPP. And SPP's NITS charges to SWEPCO are based on actual loads, not anticipated loads, served with BTMG. Moreover, the issue here is transmission service charges, not generating capacity and energy. As with all transmission planning, the normal system condition minus one event (N-1) is the guideline for determining the transmission requirements on the system. As stated earlier, if BTMG experiences a forced outage and the load remains connected to the system then it will immediately begin withdrawing power from the SPP Transmission System. As such, in accordance with NERC standards, the SPP Transmission System must be operated in a manner to survive such a contingency.

Q. MR. AL-JABIR INSISTS THAT IT IS IMPRUDENT FOR A UTILITY TO PLAN ITS TRANSMISSION SYSTEM TO SERVE ITS GROSS LOAD.[16] DO YOU AGREE?

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[14] Direct Testimony of Jeffry Pollock at 23:14 – 24:5 (citing 16 Tex. Admin Code § 25.242(k)(3)(A) and 18 C.F.R. 292.305(c)(1)); Direct Testimony of Ali Al-Jabir at 24:16 – 25:7 (same).

[15] *See* 16 Tex. Admin Code § 25.242(k)(3)(A) and 18 C.F.R. 292.305(c)(1).

[16] Direct Testimony of Ali Al-Jabir at 24:1-9.

A. No. If BTMG experiences a forced outage and the load remains connected to the system then it will immediately begin withdrawing power from the SPP Transmission System. As noted above, NERC standards dictate that the Transmission System be operated in a manner to survive such a contingency. In order for the SPP to be capable of operating the system to survive such a contingency, then the SPP Transmission System must first be planned to survive such a contingency.

Q. EVEN ASSUMING THAT SWEPCO WAS NOT REQUIRED TO REPORT BTMG TO SPP, IS IT VALID TO ASSUME, AS MESSRS. POLLOCK AND AL-JABIR DO THAT SWEPCO'S TRANSMISSION COSTS WOULD GO DOWN?

A. No. Messrs. Pollock and Al-Jabir's assumption relies on the additional assumption that all of the other SPP members would not make any changes to their reporting. But that makes no sense. If SPP changed its position on the reporting of BTMG load, it is unreasonable to assume that only SWEPCO would stop reporting such load. As the load reported by all other network loads in the 13-state area of SPP are updated to remove BTMG loads, the load ratio share of all network customers would change and there could be an increase in cost to SWEPCO.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes, it does.

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SOUTHWESTERN ELECTRIC POWER COMPANY'S RESPONSE TO TEXAS INDUSTRIAL ENERGY CONSUMERS' SIXTH SET OF REQUESTS FOR INFORMATION

Question No. TIEC 6-3:

Referring to SWEPCO's response to TIEC 1-7:
a. Please provide all SPP documents, including FERC Orders, supporting SPP's decision to bill SWEPCO for NITS service for behind-the-meter retail load being served by Eastman Chemical Company effective in October 2018.

b. Please confirm that, prior to October 2018, SWEPCO was not billed by SPP for retail behind-the-meter load.

c. Please provide all documents prepared by AEP that address the appropriateness or inappropriateness of SPP's decision to bill SWEPCO for NITS service for behind-the-meter retail load.

Response No. TIEC 6-3:

a) Please see TIEC 6-3 Attachment 1 which is a report delivered to the SPP Market and Operations Policy Committee in March 2018. In addition, please see Attachment 2 for a presentation delivered more recently to the MOPC on this issue.

b) Confirmed. At this time SWEPCO has not been billed prior to that date.

c) Although AEP participated in discussions with SPP & other SPP Members concerning SPP's practice regarding behind-the-meter load as identified in Attachments 1 and 2, no responsive documents prepared by AEP have been located.

Prepared By: Earlyne T. Reynolds — Title: Reg Pricing & Analysis Mgr

Prepared By: C. Richard Ross — Title: Dir Trans RTO Policy

Sponsored By: Jennifer L. Jackson — Title: Reg Pricing & Analysis Mgr

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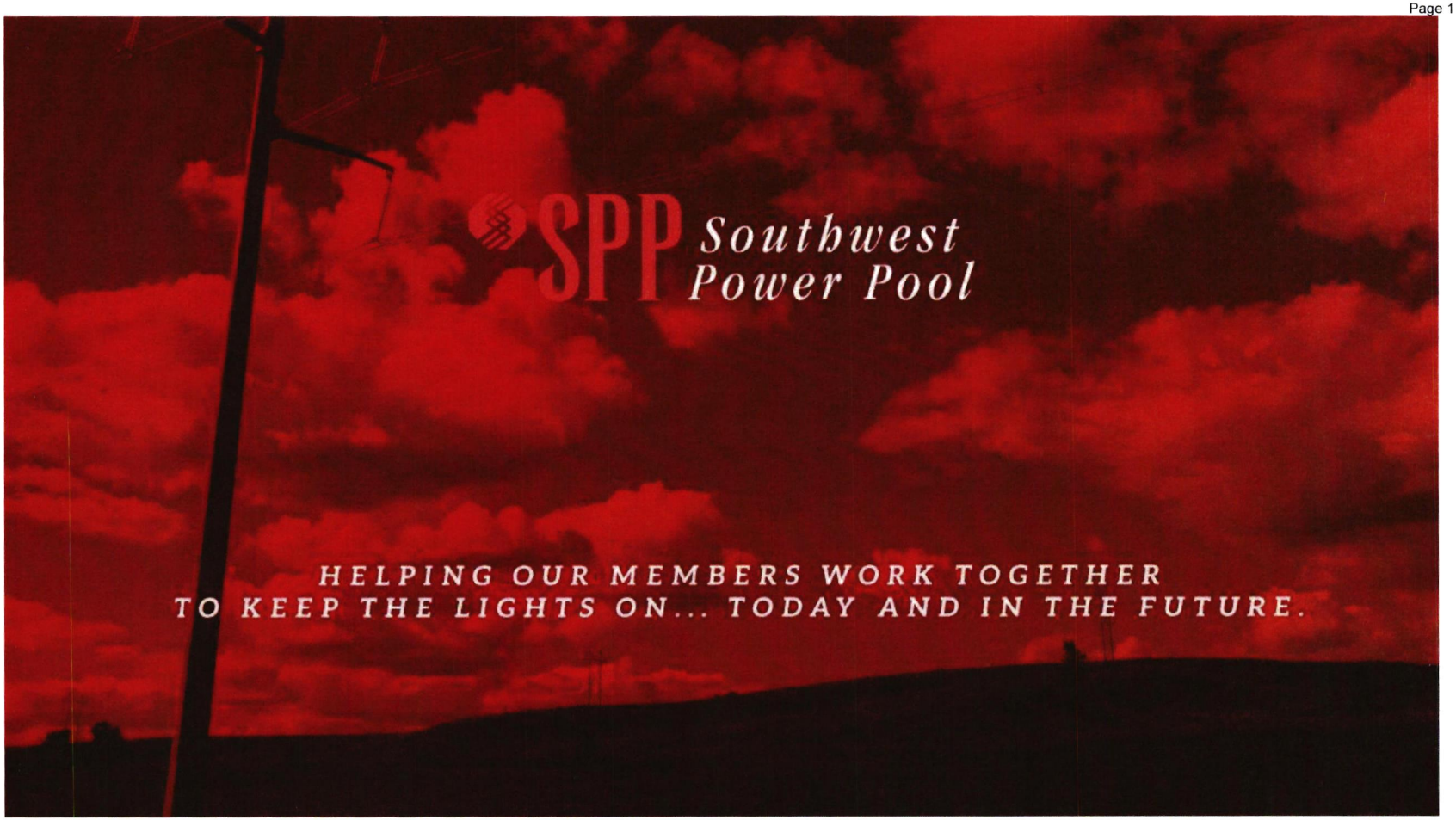

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Purpose of Presentation

- Review of current requirements for reporting of Network Load
  - Focus on Behind-the-Meter Generation (BTMG) requirements
- Discussion of results from the survey of Network Load reporting in SPP

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Tariff Provisions

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FERC Pro Forma Definition of Network Load

The load that a Network Customer designates for Network Integration Transmission Service under Part III of the Tariff. The Network Customer's Network Load shall include all load served by the output of any Network Resources designated by the Network Customer. A Network Customer may elect to designate less than its total load as Network Load but may not designate only part of the load at a discrete Point of Delivery. Where a Eligible Customer has elected not to designate a particular load at discrete points of delivery as Network Load, the Eligible Customer is responsible for making separate arrangements under Part II of the Tariff for any Point-To-Point Transmission Service that may be necessary for such non-designated load.

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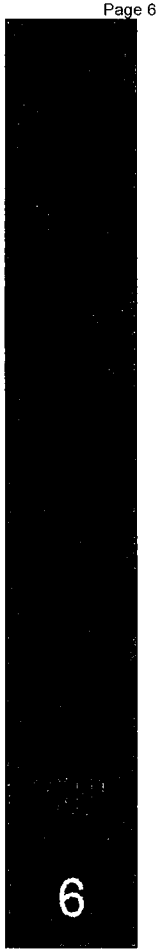
SPP Tariff Definition of Network Load

The load that a Network Customer designates for Network Integration Transmission Service under Part III of the Tariff. The Network Customer's Network Load shall include all load served by the output of any Network Resources designated by the Network Customer. A Network Customer may elect to designate less than its total load as Network Load but may not designate only part of the load at a discrete Point of Delivery. Where an Eligible Customer has elected not to designate a particular load at discrete points of delivery as Network Load, the Eligible Customer is responsible for making separate arrangements under Part II of the Tariff for any Point-To-Point Transmission Service that may be necessary for such non-designated load.



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SPP Tariff Definition of Resident Load for Schedule 11 Billing - Section 41(b) only

(b) Transmission Owners providing transmission service to: (i) bundled retail load for which such Transmission Owners are not taking Network Integration Transmission Service or Firm Point-To-Point Transmission Service under the Tariff; and (ii) load being served under Grandfathered Agreements for which such Transmission Owners are not taking Network Integration Transmission Service or Firm Point-To-Point Transmission Service under the Tariff. . .

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Losses in Network Service Load - SPP Tariff Attachment M, Sec. II(a)

The Network Customer shall be responsible for real power losses associated with Network Integration Transmission Service to its Network Load for each Zone in which its Network Load is located for the purposes of determining charges under Schedule 9 and Schedule 11 to this Tariff. The Network Customer's loss responsibility . . . shall be included when calculating that Network Customer's Load Ratio Share, Base Plan Zonal Load Ratio Share and Region-wide Load Ratio Share.

FERC Orders

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FERC Order in FMPA v. FP&L - Docket Nos. TX93-4 & EL93-51

Page 23: FMPA argues that Florida Power's local resources should be treated differently because all are connected to the grid, while FMPA's generating units can meet local loads without first entering the Florida Power grid. This is not a meaningful distinction. . . If FMPA has a load and resource that it does not want to integrate, it can isolate the load and resource from Florida Power's transmission system and eliminate it from the request for full integration

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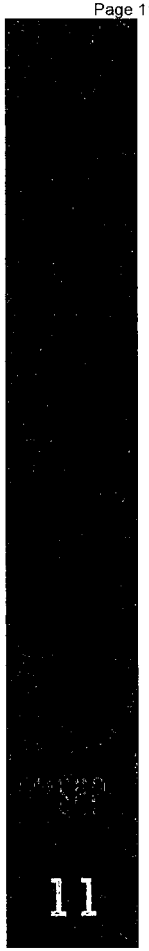

Order 888

Page 297: . . . if a customer wishes to exclude a particular load at discrete points of delivery from its load ratio share of the allocated cost of the transmission provider's integrated system, it may do so. Customers that elect to do so, however, must seek alternative transmission service for any such load that has not been designated as network load for network service. This option is also available to customers with load served by "behind the meter" generation that seek to eliminate the load from their network load ratio calculation.

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Order 888-A

Page 245:. . . the Commission will allow a network customer to exclude the entirety of a discrete load from network load, but not just a portion of the load served by generation behind the meter.

Page 247: Quite simply, a load at a discrete point of delivery cannot be partially integrated – it is either fully integrated or not integrated.

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Order in Occidental Complaint against PJM - Docket No. EL02-121

PJM's practice of adding back the amount of load reduction during curtailment was rejected by FERC:

¶ 27: . . . the Commission found that PJM's practice of adding back curtailed load to its calculation appeared inconsistent with the underlying rationale of reducing a customer's costs when it reduces load during system peaks. The October 10 Order further noted that relying on curtailed loads to allocate PJM's access charge costs may create a disincentive for load serving entities (LSEs) to implement load response programs on their own systems, since LSEs would be charged for system costs regardless of whether they curtail load during system peaks.

Order 890

- ¶ 1619: The Commission is not persuaded to require transmission providers to allow netting of behind the meter generation against transmission service charges to the extent customers do not rely on the transmission system to meet their energy needs . . . We believe it is most appropriate to continue to review alternative transmission provider proposals for behind the meter generation treatment on a case-by-case basis, as the Commission did in the PJM proceeding cited by the commenters.

Order 890-A

¶ 965: The Commission declined to require transmission providers to allow netting of behind the meter generation against transmission service charges to the extent customers do not rely on the transmission system to meet their energy needs, stating that commenters had not provided any different arguments not fully addressed in Order No. 888. . . The Commission concluded it is most appropriate to continue to review alternative transmission provider proposals for behind the meter generation treatment on a case-by-case basis.

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Order 890-B

¶ 216: In Order No. 890-A, the Commission reiterated that the pro forma OATT permits transmission customers to exclude the entirety of a discrete load from network service and serve such load with the customer's behind the meter generation and through any needed point-to-point service, thereby reducing the network customer's load ratio share. In other situations, use of point-to-point service by network customers is in addition to network service and, therefore, does not serve to reduce their network load . . .

Order in Ameren Complaint against Prairieland – Docket No. EL09-69

¶ 27: Prairieland failed to comply with the Tariff by not designating its total load as Network Load . . . Prairieland had the responsibility under its Service Agreement and the Tariff to designate the necessary behind-the-meter generation when taking Network Service. As the Commission has explained in Order Nos. 888 and 890, the responsibility for load served by behind-the-meter generation is with the transmission customer

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Summary of Network Load Reporting Requirements

For network service at a discrete delivery point, SPP understands FERC's general policy as requiring all actual load to be reported

Since only actual load is to be counted, there should be no add-back of load that has been reduced by utility curtailment or interruption

The load is to reflect adjustment for losses across the transmission system in accordance with the SPP Tariff

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Summary of Network Load Reporting Requirements

A customer can have discrete delivery points, some of which are served by network service (100%) and others of which are served by either point-to-point or a combination of point-to-point and BTMG

For a discrete delivery point under network service, SPP has identified no generally applicable exemptions for partial load served by:

- Behind-the-Meter Generation
- Point-to-point service

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Does FERC Allow Exceptions?

Yes. Exceptions to the general requirements have been approved by FERC when requested and justified on a case-by-case basis

Order 890-A

¶ 970: . . . Any alternative transmission provider proposals for behind the meter generation treatment will be reviewed on a case-by-case basis.

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PJM's Policy for BTMG

In Docket No. ER04-608, FERC conditionally accepted PJM's proposal to allow netting of load that is served by BTMG at the same electrical location as the load.

- The transmission and distribution systems would not be utilized by such BTMG
- This change allowed for netting of BTMG for retail load

In Docket Nos. ER04-608 and EL05-127, FERC accepted PJM's proposal to expand the netting program to include a limited amount of non-retail BTMG serving load without using the transmission system

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PJM's Current Definition of BTMG

"Behind The Meter Generation" shall refer to a generation unit that delivers energy to load without using the Transmission System or any distribution facilities (unless the entity that owns or leases the distribution facilities has consented to such use of the distribution facilities and such consent has been demonstrated to the satisfaction of the Office of the Interconnection); provided, however, that Behind The Meter Generation does not include (i) at any time, any portion of such generating unit's capacity that is designated as a Generation capacity Resource; or (ii) in an hour, any portion of the output of such generating unit[s] that is sold to another entity for consumption at another electrical location or into the PJM Interchange Energy Market.

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California ISO Stakeholder Process

The Transmission Access Charge (TAC) "is currently assessed at end use customer meters on gross load" and is an energy-based (MWh) charge rather than a peak demand charge

In recent months, CAISO has been undertaking a review of the TAC rate structure with its stakeholders and is considering multiple alternatives

MISO Stakeholder Process

In recent months, the Planning Advisory Committee has been discussing and gathering stakeholder comments regarding treatment of BTMG in network load reporting

MISO staff's presentation at the March 14 PAC meeting included a proposed schedule to finalize Tariff language regarding BTMG in October 2018

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Results of the Load Reporting Survey Requested by MOPC

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Network Customer Outreach

- Original Survey sent to 62 Transmission Customers with Network Load
- Intended to gain understanding of footprint reporting practices for MOPC discussion
- Asked about Grandfathered Loads and MW Behind-the-Meter with regard to Network Loads reported for Transmission billing
- Some follow-up questions were sent to gain clarity on answers given
  - All surveys have been returned
- Recently, a 2nd survey specific to MW behind the retail meter was sent to the same audience
  - Half have been returned

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Grandfathered Loads

- Most responses showed no "non-standard" treatment, with GFA MW included in Resident Load
- Reported exceptions:
  - "GFA load not Resident Load due to "Load is pseudo-tied to XXXX who is also the power Supplier" or "Load is Pseudo-Tied to XXXX " - creating dependency that each respective Zone is reporting those loads in Resident Load.
  - "The full reservation is used as the CP, not the actual schedule"
  - GFA loads don't count toward Resident Load due to either "sinking in another Zone", or "being associated with another TSR that's paying Schedule 11"
  - Some "...relate to PTP transactions that sink in a different transmission pricing zone within SPP, and are therefore, excluded in determining...Schedule 11 charges pursuant to Section 41(b) of the SPP tariff."

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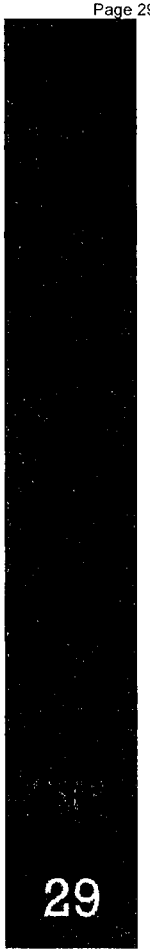
Grandfathered Loads – Discussion Points

- What would exempt GFA from a Resident Load amount?
  - Pseudo-Tied to another Zone?
  - GFA Sinking in another Zone or exiting the region?
  - SPP PTP in the continuous transmission path of the GFA?
  - Other?

- What MW to report?
  - Reserved amount vs. Schedule amount



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Behind-The-Meter (BTM) MW

- Multiple responses showed "non-standard" treatment, with BTM MW not being included in Network Load amounts
- Reported exceptions:
  - "At this time, we are not adding in generation consumed behind a retail meter."
  - "XX has interpreted the combination of btmg registration requirements in SPP Protocols 6 and in OATT Attachment AE, Section 2.2(6), and the definition of Network Load in NITSA Section 2.0 and in OATT 34.4 to be such that small (loads)...are netted against Network Load."
  - "XX is netted against Network Load, but is behind a retail meter and should be ignored no matter what."
  - "We do not add the solar farm gen into our peak because it's a BTM, unregistered, and undispatchable resource. In real time when it operates, it will reduce our SPP load by its output, and it also reduces our reported NITS one-hour peak load by the solar farm output. We use the same number for both the monthly number and the PYCP. We only add the solar farm generation back in when reporting our total load for the month on the Net Energy for Load form, and also in the Resource Adequacy Workbook."

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Behind-The-Meter (BTM) MW

- Reported exceptions continued:
  - "This unit is not registered in the Marketplace because of the aforementioned inability to feed into the transmission system(s). This unit is strictly used for two purposes: offset usage and allow for emergency load support during outages."
  - "However, the BTM generators that are not registered with the market do reduce down the load before it is reported."
  - "XX does not currently include end-use customer-owned generation that is behind the retail meter in the TC NITS Load calculation."
  - "With regards to NITS, no, we do not currently add BTM generation to our reported NITS load, per our internal interpretation of "BTM"."
  - "All behind the Meter Gen if running at the peak is included in NITS reporting. An exception to this is retail customers that have generation behind the retail meter We have no way of metering solar panels for example behind retail meters."
  - "Awaiting final determination and establishment of rules/guidance from SPP"

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Behind-The-Meter (BTM) MW

- **Reported exceptions continued:**
  - "All BTM generation is netted against NITS Load."
  - "...XX references SPP's ongoing discussion about 1MW threshold - looking for agreed upon guidance."
  - "XX and the XX have numerous small backup generators at our plants, control centers and microwave sites. These backup generators are never synchronized to the power system so we did not include them in our response."

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Behind-The-Meter – Discussion Points

- **What would exempt BTM MW from a Network Load amount?**
  - Behind the retail meter vs. wholesale meter?
  - Generator not synchronized to the Transmission System?
  - BTM MW < X MW?
  - Can BTM MW net against Network Load reported?
  - Does market registration affect whether the generation is reported?

- **Different Treatment for:**
  - Transmission Billing
  - Resource Adequacy / Planning
  - Integrated Marketplace Billing

DISCUSSION

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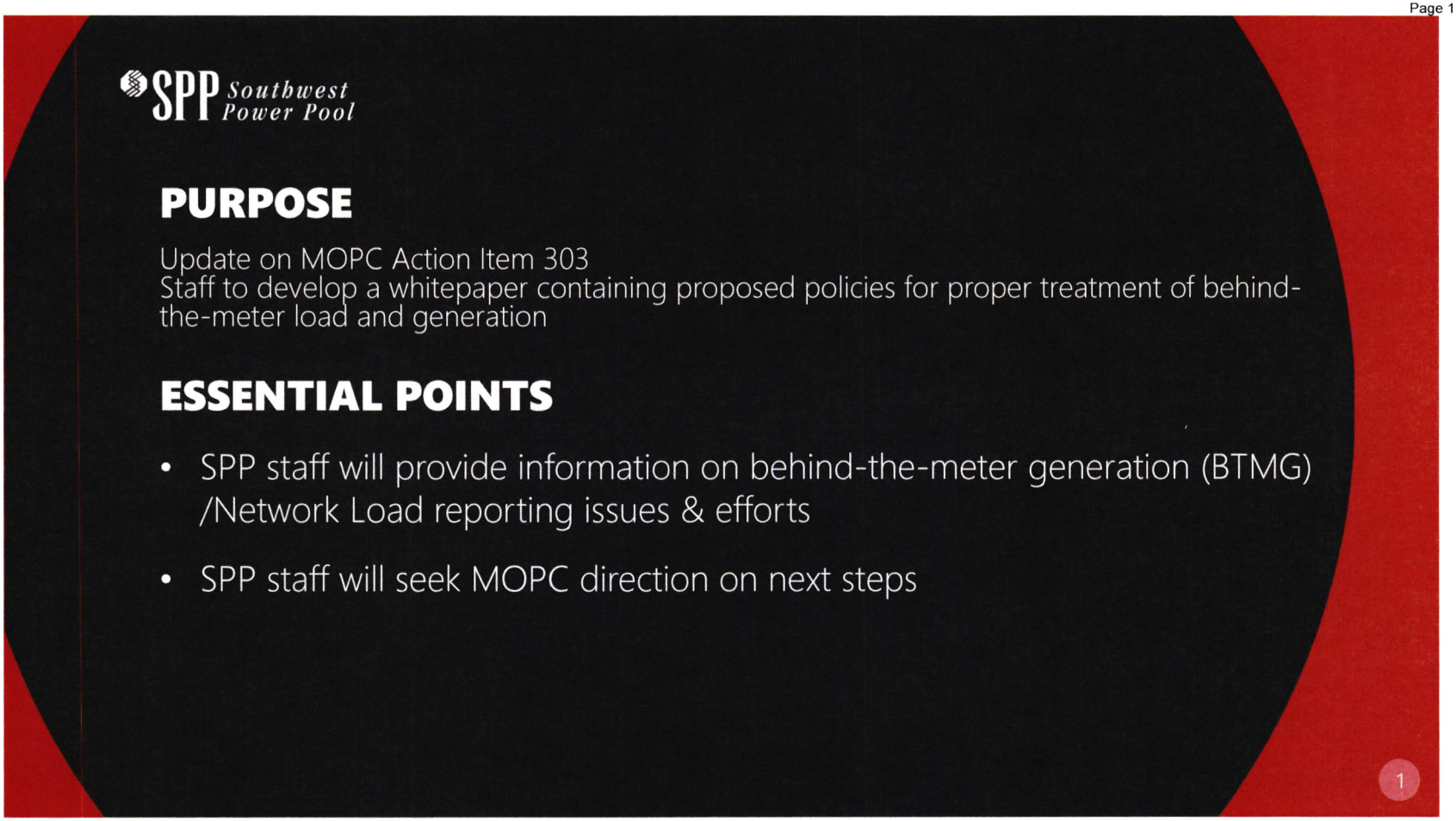

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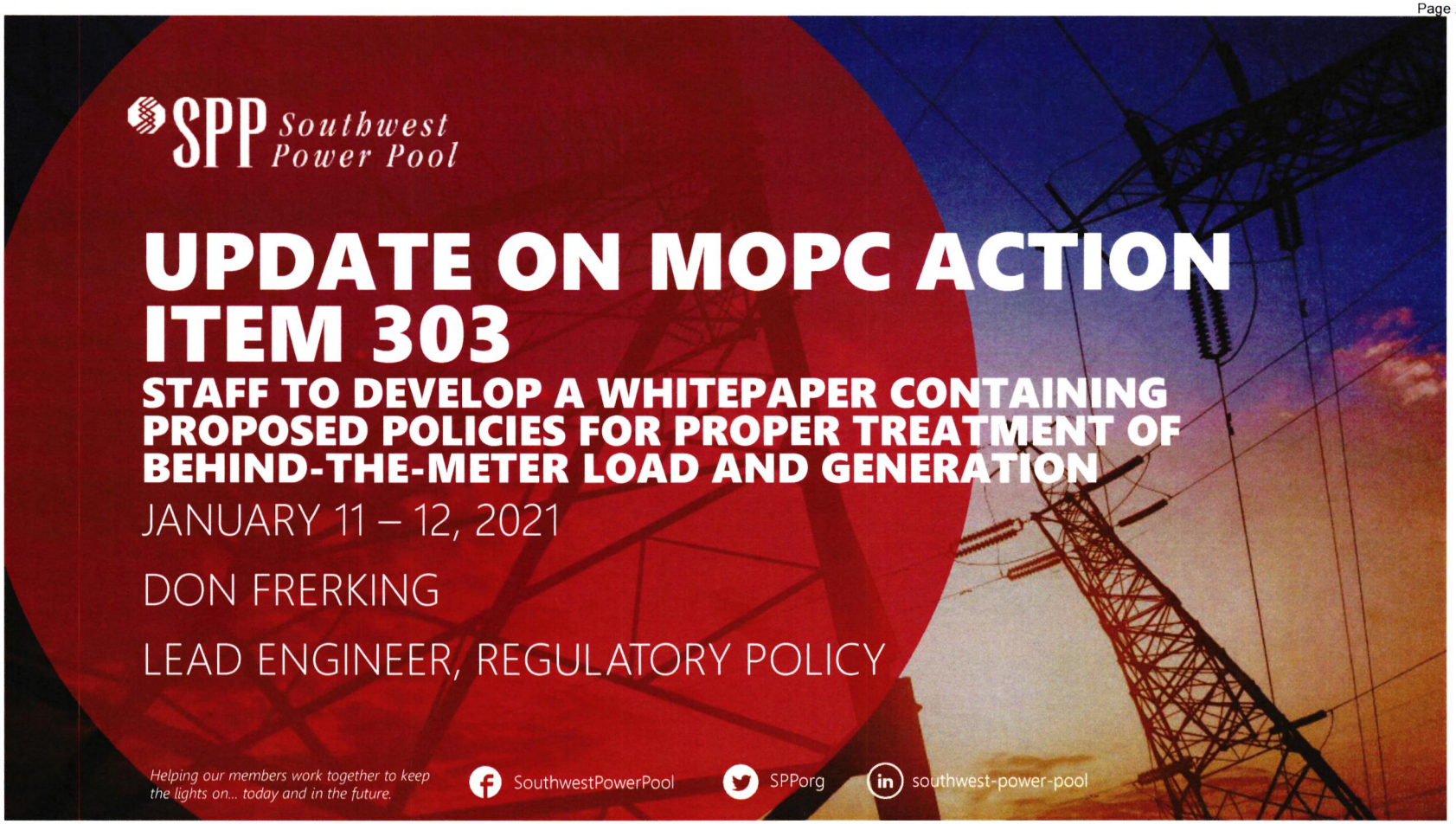

PURPOSE

- Provide information on Behind the Meter Generation (BTMG) / Network Load reporting issues & efforts
  - Recap of past **SPP efforts** (Revision Requests (RRs) & surveys)
  - Recap of efforts in **other RTOs**
  - Discussion of **future related issues** (ESRs, Order No. 2222, etc.)
- Request for MOPC direction on next steps. Options may include:
  - **Maintain status quo** – continue policy of no netting
  - **Develop new exception language** for stakeholder process and eventual filing
  - **Pause exception efforts** pending resolution of related issues (e.g. ESRs, Order No. 2222, etc.)

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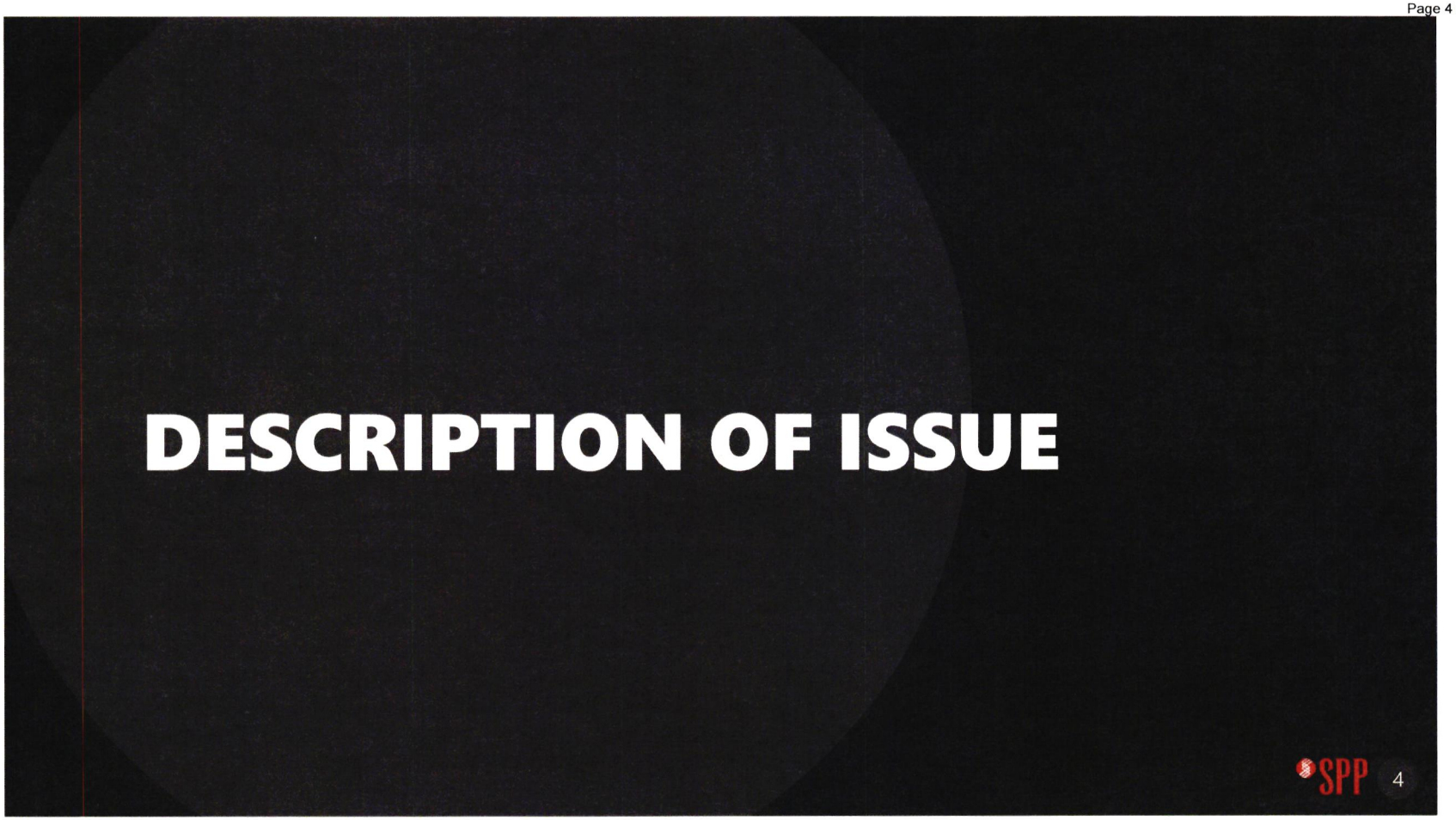

"NET" VS "GROSS" LOAD REPORTING

- Load as metered at a delivery point is **"net of"** (i.e., reduced by) the output of any generation behind (i.e., on the load side of) the meter at the delivery point.
- Thus, to determine the **"gross"** Network Load at a delivery point, the output of any behind-the-meter generation would need to be added to metered load at that delivery point.

Stated another way, metered load at the delivery point must be grossed up by the output of the BTMG to determine the delivery point's Network Load.

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BTMG REPORTING ISSUE & IMPLICATIONS

- There is a continuing **lack of clarity and/or difference of understanding** regarding the treatment of BTMG in the context of Network Load reporting
  - This leads to **inconsistencies in the amount of load** reported by Network Customers

Inconsistent load reporting leads to improper allocation of costs to Network Customers – with some paying more than they should and others paying less

SPP 6

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FERC PRO FORMA DEFINITION OF NETWORK LOAD

The load that a Network Customer designates for Network Integration Transmission Service under Part III of the Tariff. The Network Customer's Network Load shall include all load served by the output of any Network Resources designated by the Network Customer. **A Network Customer may elect to designate less than its total load as Network Load but may not designate only part of the load at a discrete Point of Delivery.** Where an Eligible Customer has elected not to designate a particular load at discrete points of delivery as Network Load, the Eligible Customer is responsible for making separate arrangements under Part II of the Tariff for any Point-To-Point Transmission Service that may be necessary for such non-designated load.

FERC definition of Network Load does not allow partial designation (e.g., load netted by BTMG)

SPP's Network Load definition mirrors the FERC definition

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FERC ORDERS 888 & 888-A REINFORCE THAT "NETTING" OF BTMG IS NOT GENERALLY ALLOWED FOR NETWORK LOAD REPORTING

Order 888
Page 297: *. . . if a customer wishes to exclude a particular load at discrete points of delivery from its load ratio share of the allocated cost of the transmission provider's integrated system, it may do so. Customers that elect to do so, however, must seek alternative transmission service for any such load that has not been designated as network load for network service.* ***This option is also available to customers with load served by "behind the meter" generation that seek to eliminate the load from their network load ratio calculation.***

Order 888-A
Page 245:. . . *the Commission will allow a network customer to exclude the entirety of a discrete load from network load,* ***but not just a portion of the load served by generation behind the meter.***
Page 247: *Quite simply, a* ***load at a discrete point of delivery cannot be partially integrated*** *– it is either fully integrated or not integrated.*

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FERC ORDERS 890, 890-A & 890-B ALSO REINFORCE THAT "NETTING" OF BTMG IS NOT GENERALLY ALLOWED BUT ALLOW FOR EXCEPTIONS ON A CASE-BY-CASE BASIS

Order 890

¶ ***1619***: ***The Commission is not persuaded to require transmission providers to allow netting of behind the meter generation against transmission service charges*** *to the extent customers do not rely on the transmission system to meet their energy needs . . . We believe it is most appropriate to continue to* ***review alternative transmission provider proposals for behind the meter generation treatment on a case-by-case basis, as the Commission did in the PJM*** *proceeding cited by the commenters.*

Order 890-A

¶ ***965: The Commission declined to require transmission providers to allow netting of behind the meter generation against transmission service charges*** *to the extent customers do not rely on the transmission system to meet their energy needs, stating that commenters had not provided any different arguments not fully addressed in Order No. 888. . . The Commission concluded it is most appropriate to continue to* ***review alternative transmission provider proposals for behind the meter generation treatment on a case-by case basis***.

Order 890-B

¶ ***216***: *In Order No. 890-A, the Commission reiterated that* ***the pro forma OATT permits transmission customers to exclude the entirety of a discrete load from network service and serve such load with the customer's behind the meter generation and through any needed point-to-point service***, *thereby reducing the network customer's load ratio share. In other situations, use of point-to-point service by network customers is in addition to network service and, therefore, does not serve to reduce their network load . . .*

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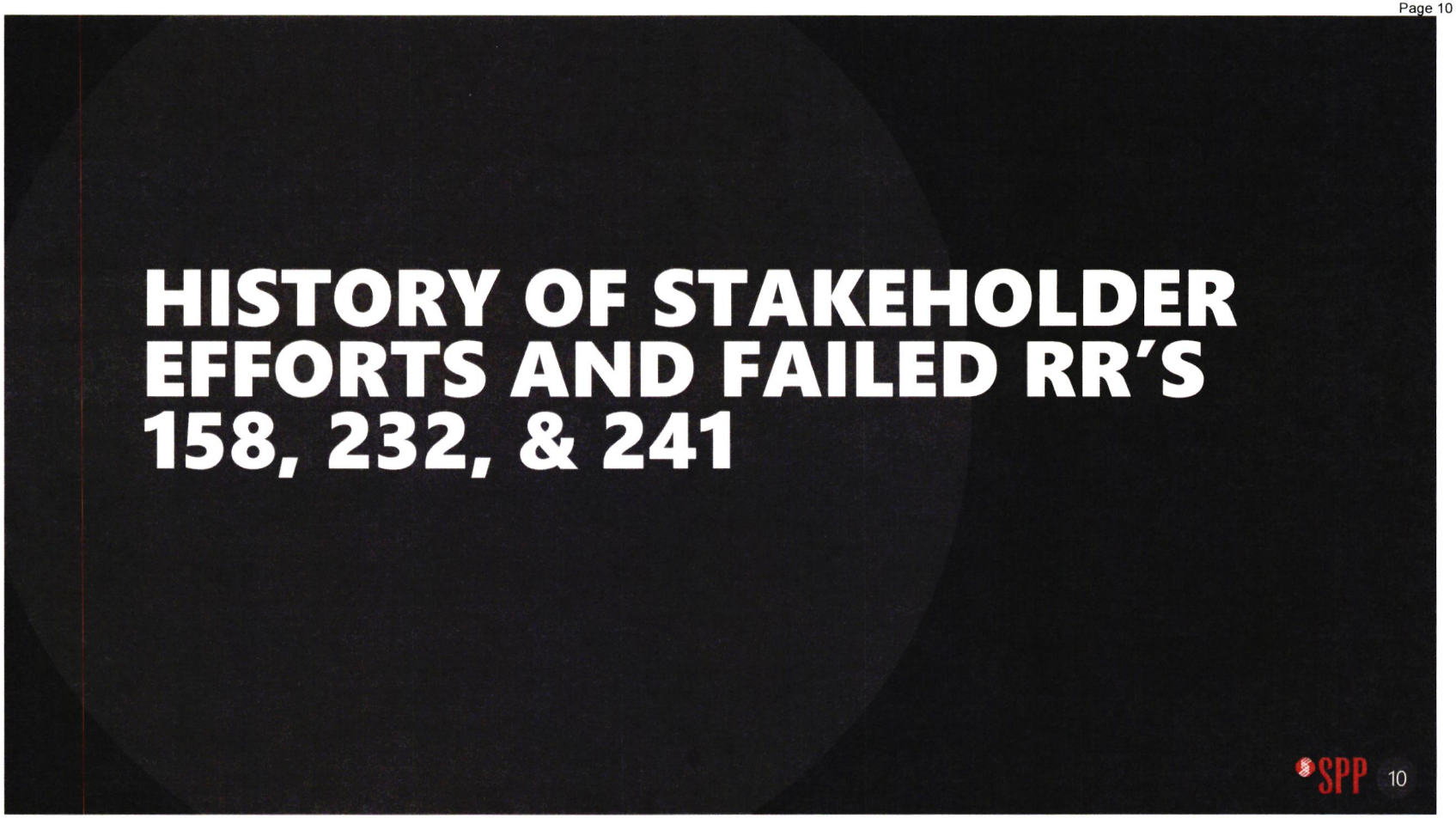

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STAKEHOLDER BTMG RR HISTORY

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RTWG/BDTF RR 158 PROVISIONS

Specific Inclusions	• Any **Designated Resource** • Any generator **owned by Network Customer** • **QFs** whose outputs are **purchased by Network Customer** • Any generator **registered in Integrated Marketplace** • Any **generator or combinations of generators greater than ?? MW(s)** not included above
Exclusions	• Any generator where **load is shed automatically with loss of generator** • Any generator of **individual retail customer** involved in regulatory body approved **net metering**

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SPC-DIRECTED RR 232 PROVISIONS

Specific Inclusions	
Exclusions	• Any generator or group of generators totaling 1 MW or less • Any generator related to an **individual retail customer** where **net metering** is required by the appropriate regulatory body • Any generator where **load is shed automatically with loss of generator**

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MOPC-DIRECTED RR 241 PROVISIONS

Specific Inclusions	• Any generation unit(s) located behind the meter at a Discrete Delivery Point and **in front of a retail end-use customer's meter** • Any generation unit with a **nameplate rating greater than 1.0 MW**, or the sum of the output from generation units with a **combined nameplate rating greater than 1.0 MW**, located behind a retail end-use customer's meter
Exclusions	• Any generation unit behind a retail end-use customer's meter that is **used for emergency back-up operations and is not synchronized to run in parallel** with the Transmission System

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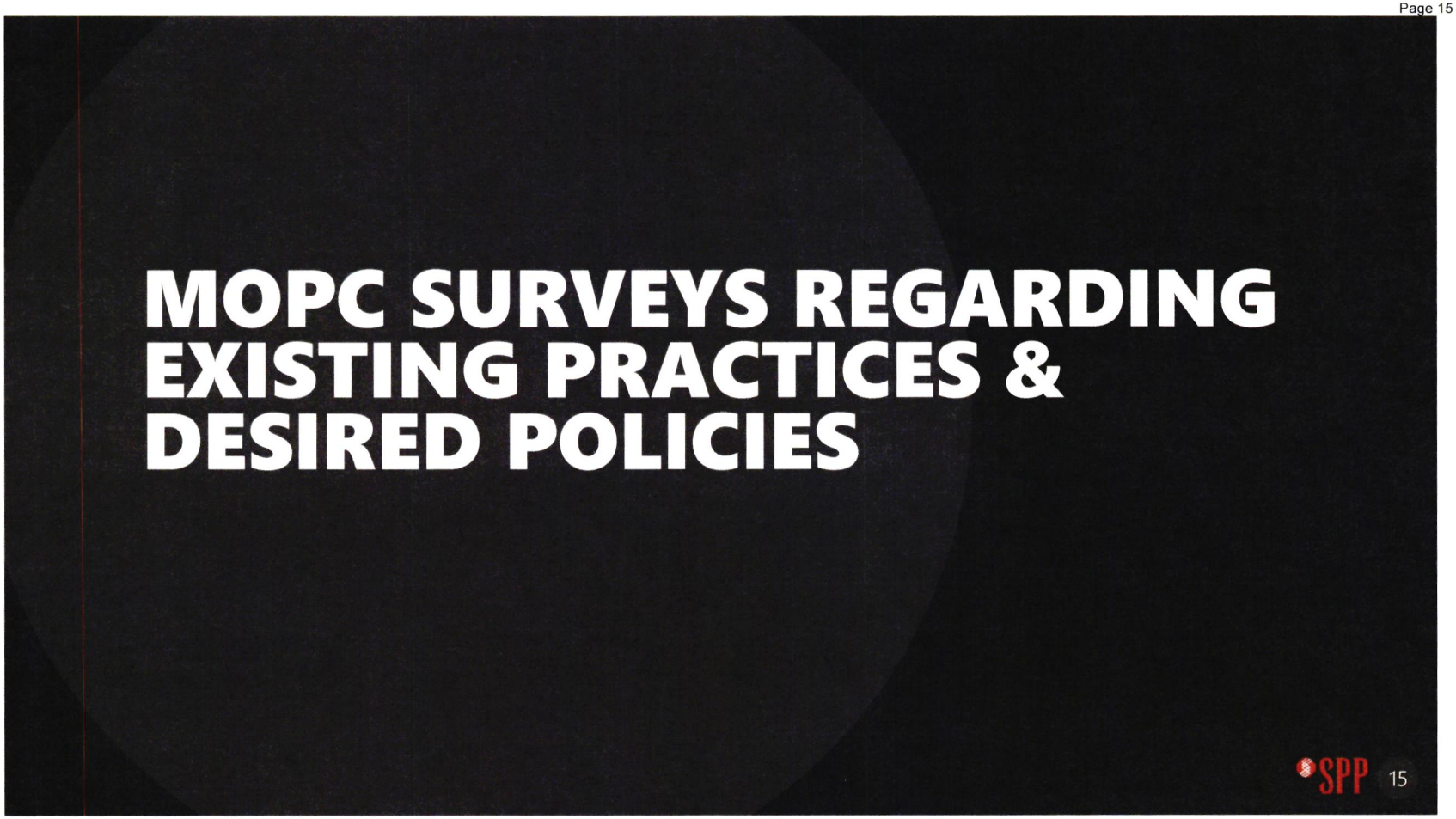

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FERC NETWORK LOAD REPORTING REQUIREMENTS & SURVEY OF NETWORK LOAD REPORTING IN SPP

- Following the failures to approve RRs 158, 232, and 241, MOPC requested that **SPP continue to review the FERC policies regarding the BTMG** in context of Network Load reporting and to review exceptions requested and approved by FERC.
  - SPP's review reinforced that FERC policy generally requires the reporting of all load at a gross level – not netted by the output of BTMG.
  - SPP's review also noted FERC may approve requested exceptions on a case-by-case basis (e.g., PJM Exception).
- MOPC also requested that SPP survey Network Customers to better understand the **reporting practices actually being employed** by those Network Customers.
  - The survey confirmed that there are inconsistencies in reporting practices – especially with regard to BTMG behind retail meters – among the Network Customers in SPP.

SPP

MOPC BTMG/NETWORK LOAD POLICY SURVEY

- SPP staff later surveyed stakeholders to gather **opinions on desired policies** and practices regarding treatment of BTMG in reporting of Network Load that **could/should be** implemented. This survey was an effort to:
  - determine extent of consensus on policies and direction regarding reporting of load
  - assess potential for developing Tariff language to provide for load reporting exceptions
  - promote reporting consistency through education and outreach

Responses received from 42 separate unaffiliated entities
- 11 Trans-owning
- 31 Trans-using

Responses received from most member types

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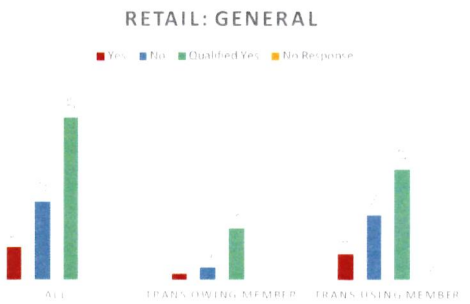
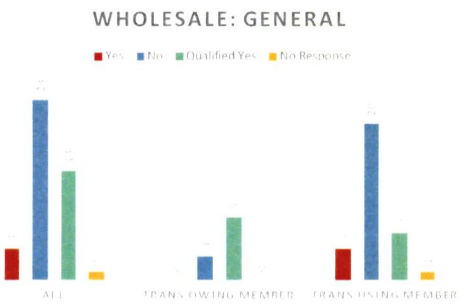
HIGH-LEVEL TAKEAWAY
RETAIL VS WHOLESALE BTMG NETTING

There appears to be interest in netting for generation behind the retail meter under certain circumstances

Retail: General	
For the purposes of reporting Network Load, should retail behind-the-meter generation be netted? In other words, should behind-the-meter generation be exempt from being added back to metered load?	
5	Yes. Netting of all generation behind the retail meter should be allowed regardless of other circumstances.
12	No. All load should be reported as gross (i.e. no netting of "any" behind-the-meter generation, including behind the retail meter).
25	Qualified Yes. Netting should be allowed under some circumstances (further detailed in responses to questions below)
0	No Response

Wholesale: General	
Should wholesale behind-the-meter generation be netted for the purposes of reporting Network Load? In other words, should wholesale behind-the-meter generation be exempted from being added back to the metered load?	
4	Yes. All generation behind the wholesale meter should be netted regardless of any other circumstances.
23	No. All load should be reported as gross (i.e. no netting of any wholesale behind-the-meter generation).
14	Qualified yes. Netting should be allowed under some circumstances (further detailed in responses to questions below).
1	No Response





There is far less interest in netting for generation behind a wholesale meter but in front of a retail meter

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HIGH-LEVEL TAKEAWAYS OTHER RELEVANT CIRCUMSTANCES

- Many respondents feel that **Designated Resources** and generators registered in the **Integrated Marketplace** are utilizing the Transmission System and should not be netted
  - Others, however, are concerned about possible discrimination and/or disincentives for resource designation and market registration
- Many respondents indicated a willingness to allow netting of BTMG generators below a **"de minimis" size (kW or MW) threshold**
  - The definition of "de minimis", however, varies among respondents
  - There is less consensus on how netting should be allowed on an aggregate level
- Many respondents feel that netting should be allowed in **situations when load is lost if the generator** is lost or conversely when the **generator is lost when the load is lost**
- Most respondents feel that "if" netting is allowed it should be restricted to load at the **same location as the generator**

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OTHER BTMG-RELATED POLICY ISSUES

- Off-Peak Usage
  - Responses were split on whether off-peak usage is a concern if netting is allowed
- Peak Reporting for Other Purposes
  - Most respondents were unconcerned about differences between peak-usage reporting for different purposes/functions under the SPP tariff as long as the relevant load needed for each purpose can be determined and is reported consistently for that purpose.
- Acceptable Level of Transmission System Usage
  - Responses were split on whether or not there is de minimis acceptable level of potential transmission system usage related to BTMG (i.e., pushing onto the transmission system from over-generation or leaning on the transmission system if the generation is offline)
- Reporting Requirement for Netted Generation
  - Most respondents indicated that, if some BTMG is allowed to be netted, there should be a reporting requirement concerning the amounts being netted.

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BTMG NETTING ISSUE HAS BEEN ADDRESSED AND/OR EVALUATED IN OTHER RTO'S

- PJM's tariff has provisions allowing BTMG netting
  - Allows netting of BTMG behind retail meter and a limited amount of non-retail BTMG

- MISO's tariff does not currently allow BTMG netting
  - MISO evaluated BTMG netting, but has chosen to not implement at this time

- ISO-NE's tariff does not currently allow BTMG netting
  - Recent ISO-NE's Internal Market Monitor report noted that BTMG reporting remains inconsistent, affecting transmission cost allocation

Additional information included in the Appendices of this presentation.

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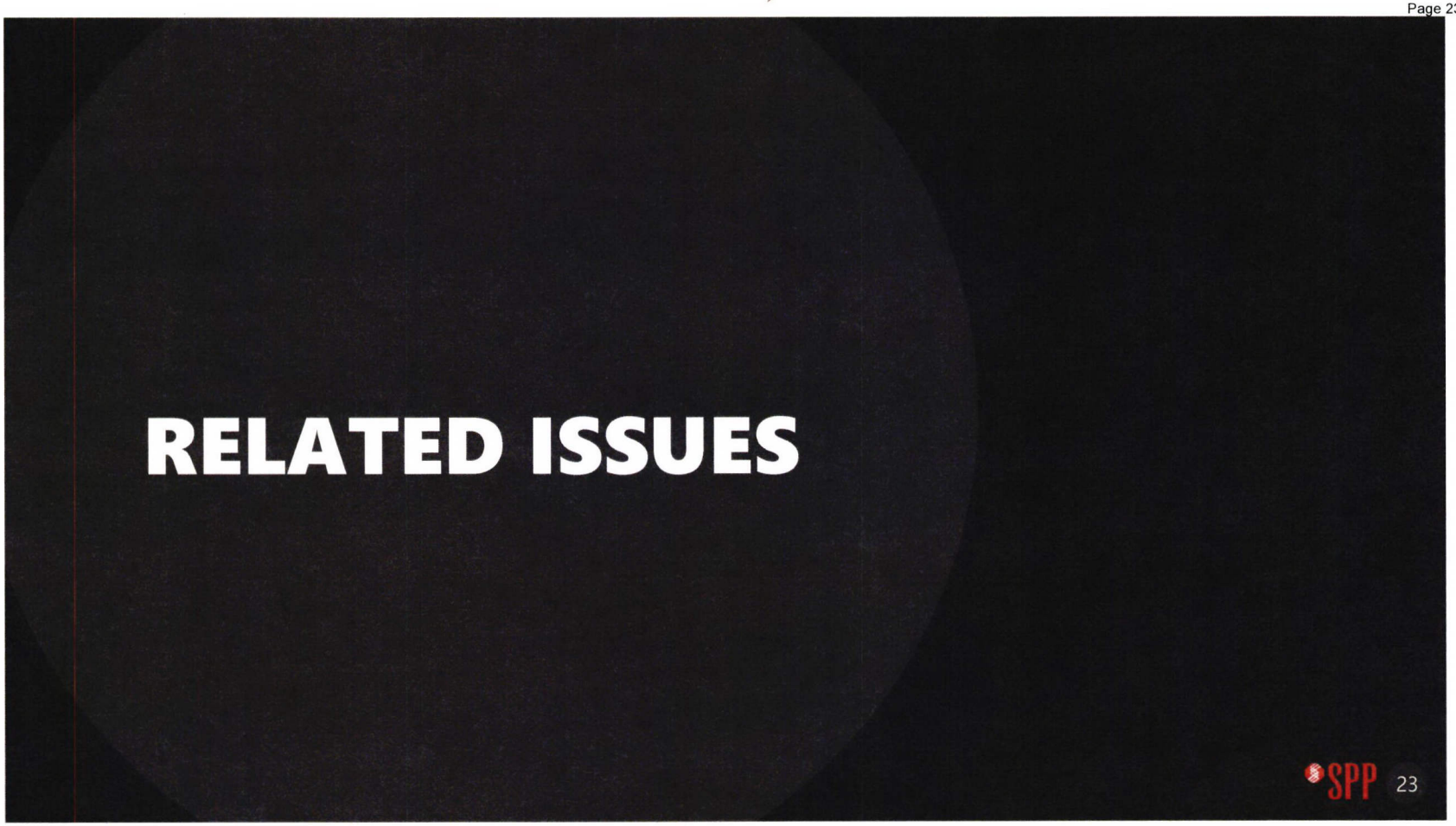

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OTHER RELATED ISSUES

- ESRs
  - May complicate BTMG netting issue going forward - SPP has already received questions about how to treat co-located solar and battery
- Reporting Requirement for Netted Generation
  - Many BTMG Policy Survey respondents indicated a desire for a reporting requirement concerning the amounts being netted - if some BTMG netting is allowed
    - Knowledge of the magnitude ($ and/or MW) of current & future netted amounts may add comfort regarding exemptions
- Order No. 2222
  - Are there any potential conflicts/inconsistencies between any potential BTMG load reporting exceptions and Order No. 2222 requirements?

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ORDER NO. 2222 – AGGREGATIONS OF DISTRIBUTED ENERGY RESOURCES

- Adopts reforms to remove barriers to participation of distributed energy resource (DER) aggregations in RTOs and ISOs
- Includes definition for Distributed Energy Resources (DER) that includes behind the meter generation
  - Distributed Energy Resource (DER) is defined as any resource located on the distribution system, any subsystem thereof or behind a customer meter. These resources may include, but are not limited to, electric storage resources, distributed generation, demand response, energy efficiency, thermal storage, and electric vehicles and their supply equipment.

Order No. 2222 may lead to more BTMG (including retail BTMG) participating in market functions, etc.

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ORDER NO. 2222 - TARIFF REQUIREMENTS

1. Allow DER aggregations to participate directly in market and establish DER Aggregators as a type of MP
2. Allow DER Aggregators to register DER aggregations under one or more participation models that accommodate the physical and operational characteristics of the DER aggregation
3. Establish minimum size requirement for DER aggregations that does not exceed 100 kW
4. Address locational requirements for DER aggregations
5. Address distribution factors and bidding parameters for DER aggregations
6. Address information and data requirements for DER aggregations
7. Address metering and telemetry requirements for DER aggregations
8. Address coordination between SPP, the DER Aggregator, the distribution utility and the relevant electric retail regulatory authority
9. Address modifications to the list of resources in a DER aggregation
10. Address MP Agreement for DER Aggregator

Size thresholds, IM participation, etc. are among the BTMG Network Load reporting provisions that have previously been discussed.

It might be helpful to sync such BTMG exceptions with future Order No. 2222 tariff provisions.

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POSSIBLE NEXT STEPS

- Maintain Status Quo – continue policy of no netting
- Develop new exception language for stakeholder process and eventual filing:
  - Exception that resembles PJM's
  - Exception that incorporates previous RR efforts & survey responses (behind retail, <? MW)
  - Other?
- Pause exception efforts pending resolution of related issues (e.g. Order No. 2222 filing, etc.)

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MAINTAIN STATUS QUO (NO NETTING)

Description	• No netting allowed for any BTMG
Pros	• No changes required • Avoids potential ligation that may follow any proposed changes
Cons	• Lack of consistency in Network Load reporting with respect to BTMG will likely continue to be an issue

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DEVELOP PJM-LIKE EXCEPTION

Description	• Exception that roughly mirrors what PJM has in place • Netting of all retail BTMG • Netting of Non-Retail BTMG up to a **????** MW threshold
Pros	• In place at PJM and accepted by FERC • Netting of retail BTMG is supported by a number of stakeholders
Cons	• Stakeholder survey seemed to support some size threshold – there may not be consensus for netting <u>all</u> retail BTMG • Netting of Non-Retail BTMG not as strongly supported by stakeholders • Netting of Non-Retail BTMG up to a **????** MW threshold complicates administration

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DEVELOP EXCEPTION THAT INCORPORATES PREVIOUS RR EFFORTS & SURVEY RESPONSES (BEHIND RETAIL, <? MW)

Description	• Netting allowed for:
	  • Retail BTMG <1? MW
	  • BTMG utilized for emergency back-up operations & not synchronized to run in parallel with the Transmission System?
	  • BTMG where load is shed automatically with loss of generator (and vice versa)?

Pros	• Lines up with interpretation by many that netting behind retail meter is currently appropriate under some circumstances • While it previously failed at MOPC, RR 241 did receive majority (54.6%) support. • Opposition/Abstention concerns may be able to be addressed
Cons	• There may not be consensus on size threshold • Lack of non-retail BTMG may lead to similar complaint(s) that led PJM to added some non-retail BTMG netting

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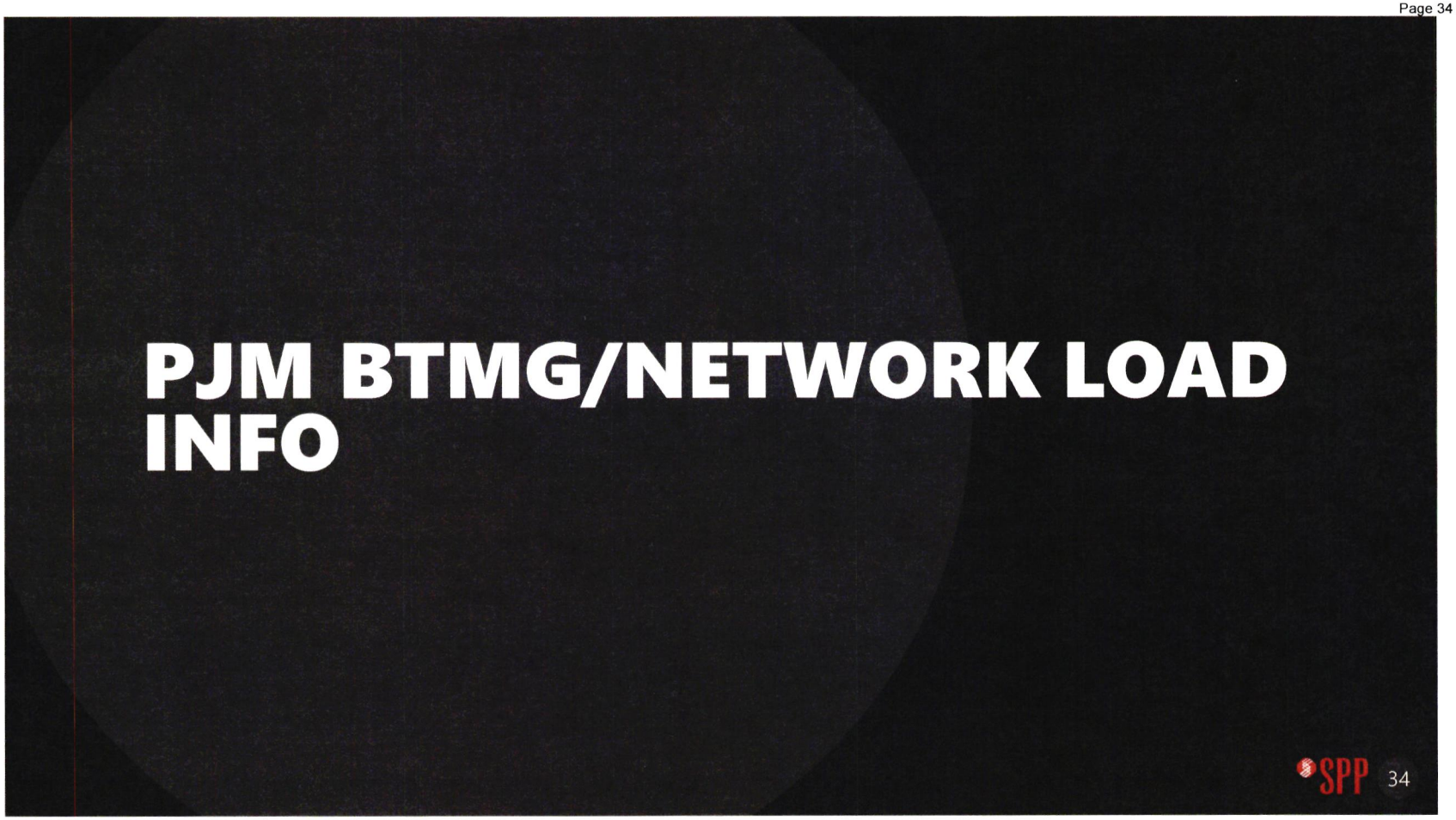

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PJM TARIFF HAS PROVISIONS ALLOWING BTMG NETTING

- PJM Tariff contains a **definition for BTMG** as well as a **definition for Non-Retail Behind The Meter Generation**.
  - BTMG is defined as "generation that delivers energy to load without using the Transmission System or any distribution facilities."
  - Non-Retail Behind The Meter Generation is BTMG "that is used by municipal electric systems, electric cooperatives, or electric distribution companies to serve load."
- Section 34.2 of the PJM Tariff, which was added to the PJM Tariff in Docket No. ER07-608, contains a specific provision **allowing the netting of BTMG** in the reporting of Network Load.
- Section 34.3, which was added to the PJM Tariff resulting from the Settlement of the complaint in EL05-127, **extended (on a limited basis)** the provision allowing the **netting of BTMG to Non-Retail Behind The Meter Generation** situations.

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PJM BTMG & NON-RETAIL BTMG DEFINITIONS

BEHIND THE METER GENERATION:
"Behind The Meter Generation" shall refer to a generation unit that **delivers energy to load without using the Transmission System or any distribution facilities (unless the entity that owns or leases the distribution facilities has consented to such use of the distribution facilities** and such consent has been demonstrated to the satisfaction of the Office of the Interconnection); provided, however, that Behind The Meter Generation **does not include** (i) at any time, any portion of such generating unit's capacity that is designated as a **Generation Capacity Resource**; or (ii) in an hour, any portion of the **output of such generating unit that is sold to another entity** for consumption at another electrical location or into the PJM Interchange Energy Market.

NON-RETAIL BEHIND THE METER GENERATION:
"Non-Retail Behind The Meter Generation" shall mean **Behind the Meter Generation that is used by municipal electric systems, electric cooperatives, or electric distribution companies** to serve load.

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PJM SECTION 34.2 & 34.3 NETTING PROVISIONS

34.2 NETTING OF BEHIND THE METER GENERATION.
The daily load of a Network Customer **does not include load served by operating Behind The Meter Generation**. The daily load of a Network Customer shall not be reduced by energy injections into the transmission system by the Network Customer.

34.3 NETTING OF NON-RETAIL BEHIND THE METER GENERATION.
Netting of Behind The Meter Generation for Network Customers with regard to Non-Retail Behind The Meter Generation shall be subject to the following limitations: For calendar year 2006, 100 percent of the operating **Non-Retail Behind The Meter Generation shall be netted, provided that the total amount of Non-Retail Behind The Meter Generation in the PJM Region does not exceed 1500 megawatts ("Non-Retail Threshold").** For each calendar year thereafter, the Non-Retail Threshold shall be proportionately increased based on load growth in the PJM Region but shall **not be greater than 3000 megawatts** ...

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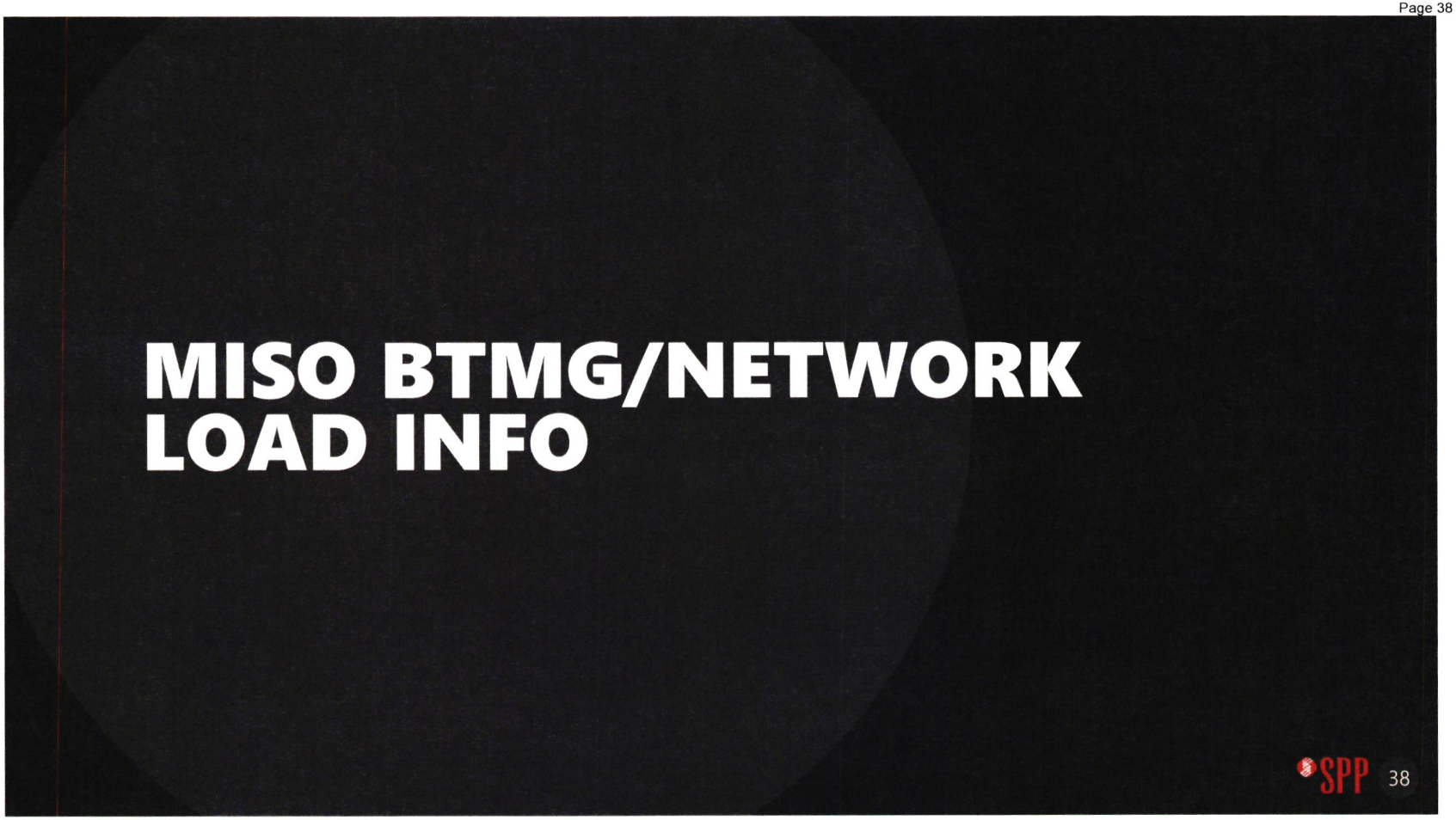

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MISO'S TARIFF DOESN'T CURRENTLY ALLOW BTMG NETTING

- The "Determination of Network Customer's Network Load" provisions in Section 34.2 of the MISO Tariff are similar to those in the FERC Pro Forma Tariff.
- Like the FERC Pro Forma Tariff, the current MISO Tariff does not provide for any netting of BTMG in the reporting of Network Load.

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MISO EVALUATED BTMG NETTING, BUT HAS NOT IMPLEMENTED

- In 2019, the MISO Planning Advisory Committee (PAC) solicited stakeholder input to **evaluate potential proposals for netting BTMG** in the reporting of Network Load.
- In April 2019, the MISO PAC developed proposal for:
  - definition of "Retail Behind the Meter Generation ("RBTMG")
  - revision to "Determination of Network Customer's Network Load" provisions in Section 34.2 of the MISO Tariff to allow for the netting of RBTMG in the reporting of Network Load
- In October 2019, however, the MISO PAC **recommended that the April proposal not be implemented**.

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APRIL 2019 MISO PAC PROPOSED RBTMG DEFINITION & 34.2 REVISION

RETAIL BEHIND THE METER GENERATION (RBTMG):
Generation resources that **serve a retail customer's load at the same electric location without using the Transmission System**, unless the entity that owns or leases the transmission facilities has consented to such use of the facilities and such consent has been demonstrated to the satisfaction of the Transmission Provider or the retail Tariff provides for such use of the facilities ; provided, however, that Retail Behind The Meter Generation **shall not include** (i) at any time, any portion of such generating unit's capacity that is designated or **registered as a Load Modifying Resource**; or (ii) in an hour, any portion of the output of such generating unit[s] that is **sold to another entity** for consumption at another electrical location or into the MISO Energy and Operating Reserve Market(s).

34.2 DETERMINATION OF NETWORK CUSTOMER'S MONTHLY NETWORK LOAD
A Network Customer's monthly Network Load is its hourly Load (60 minute, Hour); provided, however, the Network Customer's monthly Network Load will be its hourly Load coincident with the monthly peak of the pricing zone where the Network Customer's Load is physically located or as otherwise located as defined in Section 31.3 (b) or (c). A Network Customer's monthly **Network Load does not include** Load served at the time of the coincident monthly peak by a **Retail Behind the Meter Generator**, or by any **Behind the Meter Generator to the extent that such load is lost** or cannot be wholly served by the transmission system when that Behind the Meter Generation is not supplying the Load.

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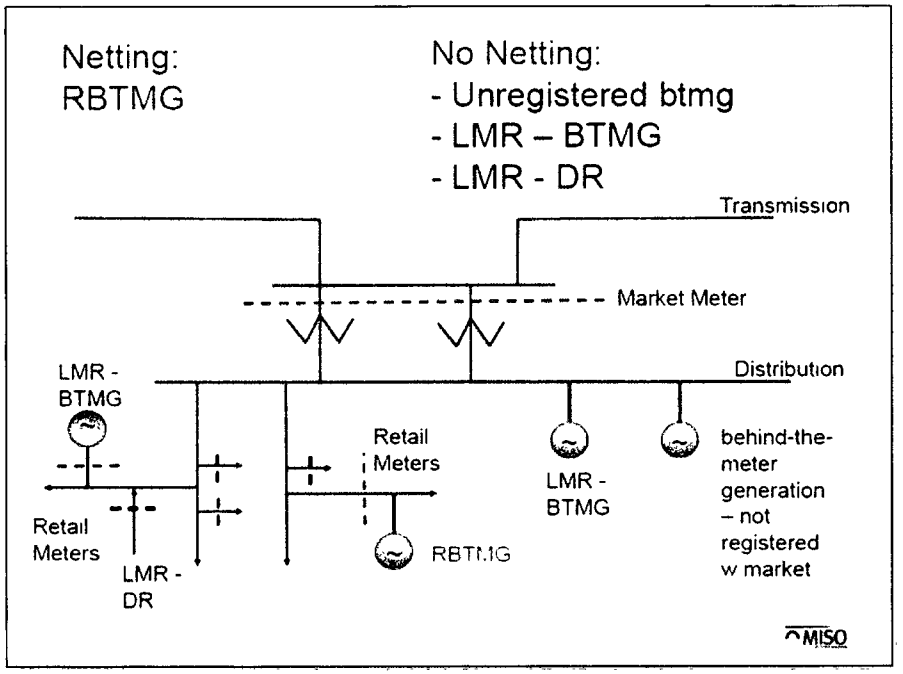
MISO GRAPHIC OF PROPOSED NETTING



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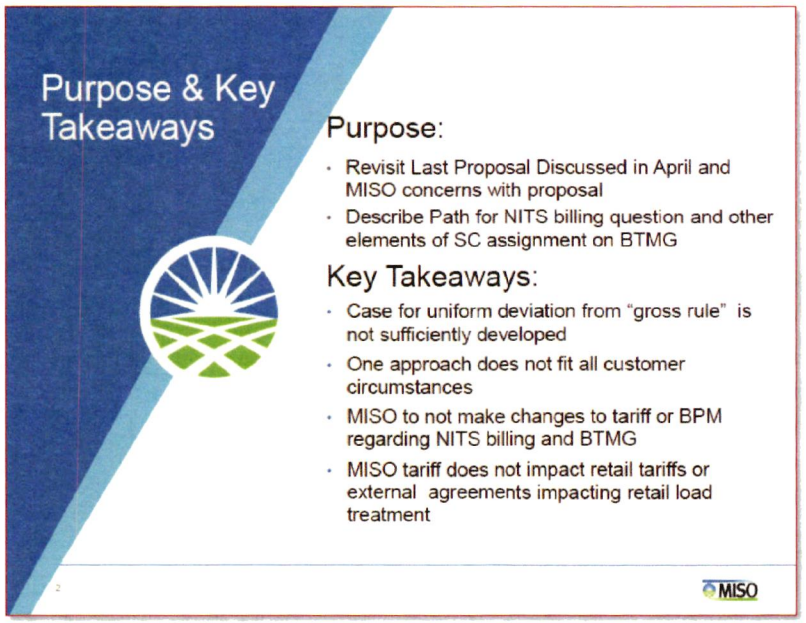
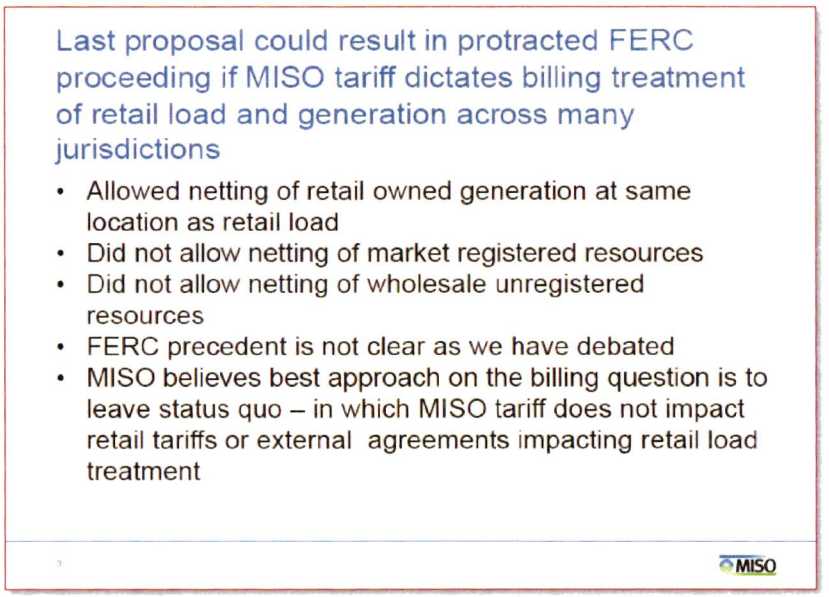
OCTOBER 2019 MISO PAC RATIONALE FOR NOT PROCEEDING WITH NETTING PROPOSAL





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ISO-NE'S TARIFF SPECIFICALLY DOES NOT ALLOW BTMG NETTING

Regional Network Load is the load that a Network Customer designates for Regional Network Service under Part II.B of the OATT. The Network Customer's Regional Network Load shall include all load designated by the Network Customer (including losses) and **shall not be credited or reduced for any behind-the-meter generation**. A Network Customer may elect to designate less than its total load as Regional Network Load but may not designate only part of the load at a discrete Point of Delivery. Where a Transmission Customer has elected not to designate a particular load at discrete Points of Delivery as Regional Network Load, the Transmission Customer is responsible for making separate arrangements under Part II.C of the OATT for any Point-To-Point Service that may be necessary for such nondesignated load.

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ISO-NE'S INTERNAL MARKET MONITOR (IMM) NOTED THAT BTMG REPORTING REMAINS INCONSISTENT, AFFECTING TRANSMISSION COST ALLOCATION

Key Takeaways

1. Regional Network Load (RNL) is the allocator of transmission costs among network customers and is required to be grossed up (or reconstituted) to account for BTM generation
2. BTM generation is not a tariff defined term but is a well understood concept in the industry.
   - We consider it to generally include generation located behind the retail meter, connected to the distribution system and intended to serve host load
3. There is potential widespread non-compliance with this requirement and/or inconsistent application
4. Under-reporting of RNL results in a lower allocation of transmission costs to the under-reporting network customer, and consequently an over-allocation to others
   - The financial impact can be significant for individual projects and network customers, but does not appear to result in significant cost shifting between states (based on BTM photovoltaic estimates)

ISO-NE PUBLIC 18

Key Takeaways (cont'd)

5. BTM generation can have positive impacts in terms of reducing peak load levels and potentially transmission investment, but under the current tariff provisions the benefits should not be monetized through under-reporting load
6. A number of recommendations are included to address issues raised in the assessment, including:
   a) Non-compliant PTOs/network customers should change current practices and reconstitute monthly RNL values
   b) Review tariff for potential helpful specificity and clarification [e.g. definitions, determination of peak load hours]
   c) Undertake a wider review of the transmission rate structure for consistency with transmission planning process and benefits due to BTM generation

ISO-NE PUBLIC 19

Internal Market Monitor's spring 2020 Quarterly Markets Report: Transmission Cost Allocation Issues for Behind-the-Meter Generation (Markets Committee, August 13, 2020)

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SEVERAL ISO-NE TO'S RESPONDED TO THE IMM REPORT BY PROPOSING POSSIBLE TARIFF CHANGES TO CLARIFY THE BTMG ISSUES

New definition of Behind-the-Meter Generation

Behind-the-Meter Generation is, for the purpose of calculating Regional Network Load, 1) an electric generation resource that is not registered as a Generator Asset with ISO-NE or 2) the portion of an electric generation resource that is not reported in the output of the registered Generator Asset associated with the electric generation resource because it serves load located behind the same retail customer meter as the electric generation resource.

Revised definition of RNL

Regional Network Load is the load that a Network Customer designates for Regional Network Service under Part II.B of the OATT. The Network Customer's Regional Network Load shall include all load designated by the Network Customer (including losses) and shall not ~~be credited or reduced for any behind the meter generation~~ include load offset by Behind-the-Meter Generation. A Network Customer may elect to designate less than its total load as Regional Network Load but may not designate only part of the load at a discrete Point of Delivery. Where a Transmission Customer has elected not to designate a particular load at discrete Points of Delivery as Regional Network Load, the Transmission Customer is responsible for making separate arrangements under Part II.C of the OATT for any Point-To-Point Service that may be necessary for such non-designated load.

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